

Occurrence, Removal and Environmental Risk Assessment of Pharmaceuticals, Personal Care Products and their Transformation Products in Wastewaters

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Pharmaceuticals and personal care products (PPCPs) have been recognized as contaminants of emerging concern (ECs) for the last fifteen years. PPCPs are intensively used, either prescribed or not, in human care and partially in veterinary purposes and fish farming. Until now, several researchers from all over the world have focused on the occurrence of PPCPs in different environmental matrices such as surface, drinking, ground water and wastewater as well as sediments and sludge from the beginning of 70's- 80's.

PPCPs follow different pathways in the environment and they are massively transported in Wastewater Treatments Plants (WWTPs), which have been pointed out as the primary sources of these contaminants' pollution into the water. Most WWTPs in northern Europe comprise tertiary wastewater treatment, while in Greece the most common treatment facilities comprise only primary and the conventional activated sludge secondary treatment. These treatment facilities have been used most often for the removal of nitrogen and phosphate, while have not been designed to specifically remove PPCPs. As a result, the load of PPCPs and their transformation products discharged into the environment and the environmental risks associated with their occurrence in treated wastewaters, is of great importance.

In light of the above, the proposed lecture aims to introduce students to the range of subjects from the sources of PPCPs and their environmental behavior, to their occurrence, fate and risk assessment as well as to the technologies and strategies available for their sampling, analysis and screening in wastewaters.